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REPORT OF THE ECONOMIC AND
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Substantive session of 1995
Item 9 (d) of the provisional
agenda**
COORDINATION QUESTIONS

Preventive action and intensification of the struggle against malaria in developing countries, particularly in Africa

Report of the Secretary-General

Executive summary

Malaria and diarrhoeal diseases, including cholera, are major problems that especially affect developing countries. They impede social and economic development and degrade the quality of life of millions of individuals, their families and their communities. They contribute to a vicious disease-malnutrition-poverty-disease cycle.

Urgent action is needed to prevent and control these diseases. Increased resources from individual countries, from the United Nations system and from other bodies are needed to apply the existing knowledge and tools and to invest in research and development to improve them. Broader development issues also need to be addressed in the longer term. Overall strategies include clearly identifying the managerial and technical principles concerned; supporting countries in capacity-building so those principles can be adapted and appropriately applied; and securing the resources required for programme implementation. To support these strategies, continued efforts are needed at country level to improve government coordination of activities supported by the United Nations system, bilateral development agencies, non-governmental organizations and the private sector.

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In response to requests from the General Assembly (resolution 49/135) and the Economic and Social Council (resolution 1994/34), action plans for the prevention and control of malaria and diarrhoeal diseases including cholera that address these issues have been developed in collaboration with relevant United Nations organizations, with the World Health Organization acting as task manager. They cover goals, work plans, time-frames and resources needed, as requested by the Council. The present report summarizes these two action plans. It is submitted through the Council to the General Assembly in response to the aforementioned resolutions.

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I. INTRODUCTION

1. The Secretary-General reported to the Economic and Social Council in 1993 1/ and 1994 2/ on the prevention and control of malaria and diarrhoeal diseases, including cholera, focusing on coordinated actions being taken within the United Nations system. After its debate in 1994, the Council adopted resolution 1994/34, in which it decided to retain the topic on the agenda of the general segment of its substantive session of 1995. It requested the Secretary-General to prepare a report "... that further addresses the agreed conclusions of the 1993 coordination segment 3/ ... and responds specifically to the questions and concerns raised during its discussions in 1994."

2. Following the debate on the report of the Council in the Second Committee of the General Assembly, the Assembly adopted resolution 49/135 on 19 December 1994, which is specifically directed to the control of malaria in developing countries, particularly in Africa. This resolution reaffirmed the 1993 agreed conclusions and, recalling resolution 1994/34, inter alia, requested the Secretary-General to submit to the General Assembly at its fiftieth session the report of the Director-General of the World Health Organization, to be prepared in collaboration with other relevant organizations, agencies, organs and programmes of the United Nations system, on the implementation of that resolution.

3. The present report, submitted to the General Assembly through the Council, responds to Economic and Social Council resolution 1994/34 and General Assembly resolution 49/135. As requested, it provides "goals, work plans, time-frames and resources needed for achieving coordination of activities within the United Nations system and responds specifically to the questions and concerns raised during the discussions of the Council in 1994" as well as to issues raised in General Assembly resolution 49/135. It also presents options to enhance action on this issue and help to mobilize funds required for this purpose. The organizations which collaborated in the preparation of the previous two reports have also been the major contributors to this report (see annex I), for which the World Health Organization (WHO) has acted as task manager.

II. QUESTIONS AND CONCERNS ARISING DURING THE 1994 DELIBERATIONS OF THE ECONOMIC AND SOCIAL COUNCIL

4. Members of the Council emphasized that malaria and diarrhoeal diseases, including cholera, were major problems that especially affect developing countries. They take a heavy toll in human life and suffering, accounting for some 4 million deaths and several hundred million cases each year. Their major impact is among infants and young children under five years of age, pregnant women, children of school age and the men and women of the work force. These diseases impede social and economic development, degrading the quality of life of millions of individuals, their families and their communities. They contribute to a vicious cycle of disease-malnutrition-poverty-disease.

5. Members expressed concern that these problems were not receiving the urgent attention and funding needed from individual countries and from the United

Nations system. They contrasted that fact with the mobilization of resources for the control of human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS), also on the Council's agenda.

6. Malaria and diarrhoeal diseases were recognized as being intimately related to social and economic development: they cannot be totally "solved" without also addressing broader development issues. Members affirmed that the country was the most important focus for coordination of activities of the United Nations and other organizations in support of national plans. Investments should be made in national capacity-building to support the countries themselves in directing that coordination. Efforts were also needed to strengthen the United Nations coordinator system at the country level and coordination within the United Nations system in general.

7. Suggestions were made that global plans of action be elaborated for the prevention and control of malaria and diarrhoeal diseases that would include recommendations for measures to be taken at the national level. The malaria plan should build on the Global Malaria Control Strategy endorsed at the Ministerial Conference on Malaria in 1992 (and subsequently endorsed by the World Health Assembly in 1993 and by the General Assembly in 1994). Members requested additional information on accomplishments in the prevention and control of those diseases as well as information on research and development, particularly with reference to the development of vaccines.

8. Issues and concerns similar to those raised by the Council also feature in resolution 49/135. They are addressed in the subsequent section of the present report, which summarizes global plans of action for the prevention and control of malaria and diarrhoeal diseases. These plans now serve as major instruments for fostering intensified action in these fields, including action to improve coordination within the United Nations system itself.

9. As the previous reports of the Secretary-General to the Council, 1/, 2/ provided details of coordinated activities of the United Nations system that support the prevention and control of malaria and diarrhoeal diseases, including cholera, this information is not repeated herein.

III. PLANS OF ACTION

10. This section summarizes the detailed plans of action that have been developed during the course of the past year in response to the requests of the Council and the General Assembly with the collaboration of the United Nations organizations shown in annex I. The actual plans are available on request for review.

A. Accomplishments

Malaria

11. Since the adoption of the Global Malaria Control Strategy at the Ministerial Conference on Malaria in 1992, efforts have been directed towards supporting countries in implementing that strategy and towards mobilizing the additional resources required. The latter include mobilization of relevant parts of the United Nations system to coordinate their support for national malaria control efforts. Accomplishments include:

(a) Development of global and regional objectives and targets based on recommendations of three interregional meetings of national programme managers and partners in malaria control, a process by which the Global Strategy was developed;

(b) Provision of guidelines and standards for the implementation of the Global Strategy including:

(i) Implementation of the Global Malaria Control Strategy: report of a study group (WHO, Geneva 1993);

(ii) The role of artemisinin and its derivatives in the current treatment of malaria (1994-1995): report of an informal consultation (WHO, Geneva 1993);

(iii) Guidelines for selective vector control: report of a study group on vector control for malaria and other mosquito-borne diseases (WHO, Geneva, 1993);

(iv) Information systems for the evaluation of malaria control programmes: a practical guide (WHO, Brazzaville, 1994);

(v) Antimalarial drug policies: data requirements, treatment of uncomplicated malaria and management of malaria in pregnancy: report of an informal consultation (WHO, Geneva 1994);

(vi) A standard protocol for assessing the proportion of children presenting with febrile disease who suffer from malarial disease (WHO, Geneva, 1994);

(vii) Management of childhood illness: draft guidelines produced by five WHO divisions/programmes currently being field-tested in collaboration with the United Nations Children's Fund (UNICEF) and the United States Agency for International Development (USAID);

(viii) Guidelines for cost-effectiveness analysis of vector control: guidelines produced by the Panel of Experts on Environmental Management for Vector Control: in collaboration with the Food and Agriculture Organization of the United Nations (FAO), the United Nations Environment Programme (UNEP) and the United Nations Centre for Human Settlements (Habitat) (UNCHS) (WHO, Geneva 1993).

The guidelines described above are being incorporated into training modules and teaching aids; considerable progress has been made in their development as interactive teaching programmes, particularly in the context of the Managing Tropical Diseases Through Education and Understanding (MANTEAU) Initiative involving the European Union, the United Nations Development Programme (UNDP) and national research institutes;

(c) Development of global and regional estimates for training for the period 1993-1997, according priority to:

(i) Planning and implementing malaria control, particularly at district level;

(ii) Strengthening diagnostic facilities;

(iii) Improvement of self-treatment in the community;

(iv) Selective vector control;

(d) Provision of technical and financial support to countries to develop and implement national plans of action for malaria control in close collaboration with other relevant partners such as UNDP, UNICEF, the United Nations Industrial Development Organization (UNIDO), the World Bank, the European Union, bilateral agencies, WHO collaborating centres and national institutes with the result that:

(i) All 45 endemic countries of the WHO Africa region (now including Eritrea and South Africa) have received financial support and, by the end of 1994, 25 of them had completed the preparation of plans of action and 10 had already started to implement them;

(ii) Ten countries in the Americas and five in the Eastern Mediterranean Region of WHO (where progress is seriously hampered by political instability) have completed their plans of action;

(iii) Reorientation is in progress in all nine countries of the WHO South-East Asia region; in the WHO Western Pacific region all nine malarious countries have defined their objectives, targets and strategies, and eight are in the process of implementing an accelerated programme of malaria control activities;

(e) Provision of technical assistance to countries facing epidemic and emergency situations;

(f) Establishment of research programmes at the global, regional and national levels and strengthening of national research capabilities oriented to the development of new tools for diagnosis, treatment and prevention and to the application of existing ones by the health services and in the community, implemented in close collaboration with the UNDP/World Bank/WHO Special Programme for Research and Training in Tropical Diseases;

(g) Extensive testing of the vaccine SPf66, developed by Dr. M. Patarroyo in Colombia against P. falciparum, in trials in South America and more recently in Africa and South-East Asia; recent results in Tanzanian children under 5 years old show that the vaccine is safe, induces antibodies, and reduces by about 30 per cent the risk of developing clinical malaria in this group; these observations, taken together with the results from South America, confirm the potential of the vaccine to confer partial protection in areas of high as well as low transmission; other candidate vaccines have been identified and are under development (see annex II), including several being studied by the International Centre for Genetic Engineering and Biotechnology supported by UNIDO;

(h) Development of indicators for epidemiological monitoring and for management information systems;

(i) Reinforcement of collaboration for malaria control within the United Nations system, involving particularly UNDP, the United Nations Educational, Scientific and Cultural Organization (UNESCO), the Office of the United Nations High Commissioner for Refugees (UNHCR), UNICEF, the World Bank and WHO, including support for integrative programmes relating to the Healthy Women's Counselling Guide (directed by the Special Programme for Research and Training in Tropical Diseases with the collaboration of the United Nations International Drug Control Programme (UNIDCP) and several bilateral agencies), the Sick Child Initiative (in collaboration with UNICEF and USAID) and the Safe Motherhood Initiative (in collaboration with UNDP, UNICEF, the World Bank, several non-governmental organizations (NGOs) and bilateral agencies).

Diarrhoeal diseases, including cholera

12. UNICEF and WHO have been fostering national diarrhoeal prevention and control programmes and supporting the coordination of national and external activities relating to them for over 15 years. Progress in these programmes has contributed to the number of deaths among children under 5 in developing countries declining by 17 per cent from 117 per 1,000 live births in 1985 to 97 in 1993, representing 1.1 million fewer deaths. Other selected achievements include:

(a) Issuance of technical guidelines relating to case management and prevention;

(b) Social mobilization, networking and involvement of the media at the national and local levels to promote preventive measures and oral rehydration therapy (ORT);

(c) Issuance of management support guidelines relating to planning, training, monitoring and evaluation in the areas of case management of diarrhoea, nutrition, food safety, rural and urban water supply and sanitation services; a set of participatory tools for sanitation and hygiene improvement have been developed by WHO and the UNDP/World Bank Regional Water and Sanitation Group - East Africa;

(d) Annual production of 400 million packets of oral rehydration salts (ORS), two thirds in developing countries and 85 per cent corresponding to the WHO/UNICEF formula;

(e) Implementation by the end of 1994 by over 100 countries of plans of action for the control of diarrhoeal diseases in children based on the policies promoted by UNICEF and WHO;

(f) Incorporation of strategies to prevent and control contamination of food and drinking water throughout the production/distribution chain into the national plans of action on nutrition prepared by member countries with technical assistance of FAO and other United Nations organizations;

(g) Implementation during 1990-1994 of 37 health facility surveys, 69 household surveys and 17 focused programme reviews using WHO/UNICEF methodology;

(h) Training of 42 per cent of health staff with supervisory responsibilities in supervisory skills and about one third of doctors and other health workers in standard diarrhoea case management, participation of staff from 128 medical schools in 20 countries and from 55 paramedical schools in some 20 countries in workshops to assist them in strengthening teaching related to diarrhoeal diseases;

(i) Establishment of more than 420 diarrhoea training units in 85 countries;

(j) Preparation of technical guidelines by WHO on the application of environmental sanitation measures for the control of cholera and other epidemic diarrhoeal diseases;

(k) Establishment of technical, sociocultural and operational research programmes at the global, regional and national levels and strengthening of national research capacities, priority being given to case management in health facilities, case management in the home and diarrhoea prevention as well as to the study of the safety and efficacy of vitamin A supplementation in young infants and studies of ways to increase the proportion of mothers who breastfeed;

(l) Field testing of methods to identify hazardous behaviour leading to food contamination and transmission of diarrhoeal diseases, including cholera; development of training materials on food safety assurance and food inspection;

(m) Completion of initial trials of vaccines against diarrhoeal disease-causing organisms, including:

(i) Studies of rotavirus vaccine in Peru and Brazil showing the vaccine to afford 25 to 50 per cent protection against all episodes of rotavirus diarrhoea for one year and 50 to 75 per cent protection against episodes that are clinically severe and potentially life-threatening; a 10-fold higher dose of vaccine has produced 80 per cent protection against severe rotavirus diarrhoea in the United States and the manufacturer is proceeding with plans to develop the vaccine for marketing;

(ii) Studies of vaccines against Enterotoxigenic Escherichia coli (ETEC: a disease caused by members of the E. coli group of intestinal bacteria) among adults in Sweden have shown that an oral vaccine composed of killed ETEC and the purified non-toxic B subunit of cholera toxin is safe and immunogenic, with some 80 per cent of volunteers developing intestinal antibody responses after two doses; further studies are continuing;

(iii) Field trials in Bangladesh and Peru of a killed cholera vaccine given in two or three doses have shown it to be safe and to provide 85 per cent protection for 4 to 6 months, declining to some 50 per cent in all age groups for three years. Studies to determine the long-term efficacy of the vaccine and to evaluate the benefit of a booster dose given after one year are under way in Peru; studies of a live oral vaccine in volunteers have shown it to be safe and highly protective as early as eight days after a single dose and further studies are being pursued;

(iv) Completion of a small efficacy trial of a parenteral Shigella sonnei polysaccharide-protein conjugate vaccine (against a common form of dysentery) conducted among adults in Israel has suggested that it is protective, at least for several months and these results are supported by other studies using similar antigens; further studies using a variety of antigens are being pursued;

(n) Maintenance of communications with health workers of all categories through the WHO newsletter Environmental Health and fact sheet Infant Feeding and the quarterly newsletter Diarrhoea Dialogue, produced with support from UNICEF and WHO;

(o) Agreement with the Swiss Disaster Relief Corps to provide technical, managerial and financial assistance in epidemic diarrhoea control and the establishment of special collaboration with the International Federation of Red Cross and Red Crescent Societies for the control of diarrhoeal diseases, including cholera, in the newly independent States of Eastern Europe and Central Asia;

(p) Establishment of close inter-agency coordination between UNICEF and WHO in the areas of diarrhoeal diseases, nutrition and water supply, and between FAO and WHO in the area of nutrition, with the respective agencies meeting at least twice a year at global level to develop joint approaches and to coordinate activities; establishment of the AFRICA 2000 initiative for water supply and sanitation, which promotes partnerships between countries, agencies and NGOs; collaboration with UNDP, UNICEF and several bilateral development agencies in support of the International Centre for Diarrhoeal Disease Research, Bangladesh; and coordination activities with a number of United Nations and bilateral development agencies at the country level, with examples including UNICEF/WHO coordination in most countries, coordination with the World Bank in Bangladesh and with UNEP in Brazil.

B. Goals/objectives

Malaria

13. The goal for malaria control is to prevent malaria-induced mortality and to reduce morbidity and social and economic loss through the progressive improvement and strengthening of local and national capabilities for malaria control.

14. Within this goal two global objectives have been set:

(a) By the year 1997, at least 90 per cent of countries affected by malaria will implement appropriate malaria control programmes;

(b) By the year 2000, malaria morbidity will have been reduced by at least 20 per cent compared to 1995 in at least 75 per cent of affected countries.

15. In support of these goals and objectives, the "milestone" targets have been set including:

(a) By the year 1995, 50 per cent of malaria-affected countries are implementing national plans of action for malaria control;

(b) By the year 1997:

(i) At least 50 per cent of countries affected by malaria will have developed epidemiological and managerial information systems according to regional guidelines;

(ii) By the year 1998, entomological staff will have been trained in selective vector control in at least 80 per cent of malaria-affected countries;

(iii) At least 80 per cent of malaria-affected countries have implemented national antimalarial drug policies;

(iv) At least 80 per cent of malaria-affected countries have implemented plans for the prevention and control of epidemics.

Diarrhoeal diseases, including cholera

16. Goals for the prevention and control of diarrhoeal diseases by the year 2000 in children under the age of 5 years were endorsed in 1990 at the World Summit for Children:

(a) Reduction by 50 per cent in deaths due to diarrhoea; and

(b) Reduction by 25 per cent in episodes of diarrhoea.

Other supporting goals for the year 2000 adopted by the Summit include:

(a) Empowerment of all women to breastfeed their children exclusively for four to six months and to continue breastfeeding, with complementary food, well into the second year;

(b) Reduction by 50 per cent in severe as well as moderate malnutrition in children under 5 years;

(c) Reduction in the rate of low birth weight (2.5 kg or less) to less than 10 per cent;

(d) Virtual eradication of vitamin A deficiency;

(e) Universal access to safe drinking water;

(f) Universal access to sanitary means of excreta disposal; and

(g) Reduction by 95 per cent of measles deaths and reduction by 90 per cent of measles cases by 1995.

17. In addition to these goals, UNICEF and WHO adopted in 1993 selected goals to be achieved by 1995 as stepping stones to the year 2000 goals. For diarrhoeal diseases, these include 80 per cent use of ORT and continued feeding for children with diarrhoea, 80 per cent of mothers knowing 3 rules of home case management of diarrhoea and 80 per cent of the population having access to ORS.

18. The goals for cholera and epidemic dysentery are to limit the spread of these infections, to reduce morbidity and to prevent mortality. The operational objective is to ensure that by the year 2000 all countries at risk of outbreaks of epidemic diarrhoea have in place plans and mechanisms to respond rapidly to epidemics so as to minimize mortality and socio-economic loss.

C. Strategies/action plans

19. While the strategies below relate separately to malaria and diarrhoeal diseases, including cholera, their common elements include clearly identifying the managerial and technical principles concerned, supporting countries in capacity-building so those principles can be adapted and appropriately applied and securing the resources required for programme implementation. To support these strategies, continued efforts are needed at the country level to improve government coordination of activities supported by the United Nations system, bilateral development agencies, NGOs and the private sector. Improved coordination of development efforts also remains a need at the international level.

20. The strategies and action plans summarized below by and large reflect WHO's contributions. Other organizations of the United Nations family have collaborated in their development and provide support within their own sectors according to their own comparative advantages and perspectives. UNICEF is a particularly close WHO partner in programme development and implementation and complements WHO's activities through its special strengths in advocacy, community mobilization and operational support to national programmes.

Malaria

21. The malaria control strategy was developed through a process of thorough consultation and on the basis of experience gained in addressing the problems of the last two decades in making the transition from a programme goal of eradication to one of control. It was endorsed by the Ministerial Conference on Malaria in 1992, by the World Health Assembly in 1993 and by the General Assembly in 1994.

22. In setting priorities for the implementation of the strategy, the following major problems faced by malaria control programmes were recognized:

(a) In most countries of sub-Saharan Africa, the quality and coverage of disease management by existing health services are still inadequate and most treatments for malaria occur in the community, not in the health services;

(b) Many control programmes lack the managerial and epidemiological capability to adapt their activities to the local malaria situation;

(c) Many countries lack the financial and technical resources for implementing their malaria programmes.

23. The strategy has four technical elements:

(a) To provide early diagnosis and treatment;

(b) To plan and implement selective and sustainable preventive measures, including vector control;

(c) To detect early, contain or prevent epidemics;

(d) To strengthen local capacities in basic and applied research to permit and promote the regular assessment of a country's malaria situation, in particular the ecological, social and economic determinants of the disease.

24. The strategy places emphasis on the strengthening of local and national capabilities to analyse different malaria situations, to mobilize and guide partners, to plan and implement control interventions, to monitor and evaluate progress, to identify and solve problems, to adapt to change and to contribute to overall health development in the context of primary health care.

25. Training is being used as the main instrument to achieve such capability strengthening. The training of district health teams, which has already been implemented in 15 countries in Africa, will be extended in 1995 to a further 11 countries in Africa and 6 in Asia and the Americas. With the support of the United Kingdom, a special effort is being made to strengthen district health services in epidemic-prone areas of India and Nepal. Education, the dissemination of health information and the preparation of operational guidelines for different levels of health services and other partners are being used to complement training activities.

26. The malaria action plan supports the malaria control strategy by placing priority in the following interrelated areas:

(a) Strengthening national capability for:

(i) Development, implementation, monitoring and evaluation of appropriate national plans of action for malaria control;

(ii) Disease management by the development of antimalarial drug policies, the strengthening of diagnostic and treatment facilities and, especially, the improvement of self-treatment in the community;

(iii) Early detection, containment and prevention of epidemics and the timely reaction to emergency situations;

(iv) Programme management and surveillance to assist countries with the establishment of new epidemiological and managerial information systems and the evaluation of existing ones in order to provide control programmes and the international community with up-to-date, relevant information on the status of malaria control in the world;

(b) Research and development oriented to solving local operational problems in the control of malaria; the development and introduction of selective and sustainable preventive measures, including vector control, vaccines and the protection of pregnant women from malaria; and the development of new antimalarial drugs;

(c) Coordination to stimulate both the mobilization of financial resources and multisectoral partnership of all interested parties in integrated malaria control activities and to ensure the implementation of common policies, continuity of action and optimal use of resources at the international and national levels. Initiatives include inter-agency agreements on the 1995-2000 Plan of Action for Malaria Control, collaboration with the World Bank and regional development banks (such as those for Africa and the Americas) in malaria control projects in at least five countries and joint policy agreements for malaria control with other international and regional organizations. The major challenge will be to ensure the political will for inter-agency and intersectoral coordination at the national level and the development of a basic framework to ensure its implementation. The activities of the Panel of Experts on Environmental Management for Vector Control, comprising representatives from FAO, UNEP, UNCHS and WHO, as demonstrated in certain countries of the Eastern Mediterranean region of WHO, has proved helpful in this regard.

27. During 1993-1994, priority was given globally to providing national control programme support to malaria endemic countries in sub-Saharan Africa. Based on this experience and that in other regions that have identified constraints for the implementation of the Strategy, and in order to utilize the limited resources available more effectively, two or three countries in each region will now be selected globally for receiving more intensified support to acquire and document experience that could guide other countries in the process of implementing the Global Strategy. This support will be consistent with the development of the countries' health services and will aim at sustainable

results, which should be applicable and accessible to other countries in similar circumstances.

28. The criteria for selecting these countries include:

(a) Government commitment to lead and support malaria control by a plan of action in line with the Global Strategy;

(b) Government collaboration and coordination with WHO, as well as other international and bilateral agencies, NGOs and other institutions involved in malaria and its control;

(c) Sufficient institutional and human resources to support the plan of action for control;

(d) Malaria control considered one of the critical steps in health development in the country;

(e) Existing or potential collaboration with national research institutions;

(f) Adequate conditions for both national intra- and intercountry training.

The finalization of the selection of the particular countries and their exact number will be determined during regional meetings on malaria control. This initiative will not detract from efforts to support and strengthen malaria control in all countries, ensuring that, by the year 2000, all persons at risk have access to affordable and adequate treatment.

29. A summary of the malaria action-plan is provided in annex III. This includes targets that have been developed at regional meetings of national programme managers. These activities will be reviewed and updated in the light of experience and new technological developments.

Diarrhoeal diseases, including cholera

30. The strategy for reducing mortality from diarrhoeal diseases has been evolved by WHO and UNICEF during some 15 years of work in supporting national programmes. It was endorsed by the World Health Assembly in resolutions WHA31.44 (1978), WHA35.22 (1982) and WHA40.34 (1987). The UNICEF Executive Board, at its session of 2 to 6 May 1994, approved the policies and the medium-term plan for UNICEF's action to control diarrhoeal diseases.

31. The strategy focuses on correct case management. This comprises:

(a) Prevention of dehydration by treating diarrhoea early in the home, using home prepared fluids;

(b) Treatment of dehydration using ORS;

(c) Appropriate feeding during and after diarrhoea;

(d) Selective use of intravenous fluids for severely dehydrated cases;

(e) For persistent diarrhoea, use of ORS, continued feeding with full caloric intake and treatment of any associated infection.

32. Strategies to prevent diarrhoea require multisectoral coordination at the country level to promote good nutrition (in particular breastfeeding), food safety, education on hygienic behaviours (handwashing, proper disposal of faeces, maintenance of drinking water free from faecal contamination) and adequate water supply and sanitation.

33. Measles frequently leads to diarrhoea in children in developing countries and is accompanied by a high fatality rate. In addition, children remain susceptible to diarrhoea for long periods after measles itself has subsided. Prevention of measles also forms part of the strategy and is being addressed successfully through the Expanded Programme on Immunization (EPI), which receives widespread national and international support with particularly close collaboration between UNICEF and WHO.

34. The goals of preventing diarrhoea cases and deaths can be achieved more rapidly and at lower cost if all major causes of childhood illness are approached in an integrated way. It is estimated, for example, that in developing countries nearly three quarters of deaths in children under 5 years are attributable to diarrhoea, acute respiratory infections (ARI), measles, malaria and malnutrition. WHO and UNICEF have defined the technical policies on the integrated case management of the sick child and are supporting countries in implementing them. The current management support materials oriented towards diarrhoea and other specific diseases are being replaced by materials addressing integrated case management.

35. The strategies for preventing and controlling epidemic diarrhoea (cholera and dysentery) are similar to those for non-epidemic acute diarrhoea, although epidemic diarrhoea primarily affects adults. A rapid response to cholera outbreaks is required to minimize loss of life and to control the spread of the epidemic. Water purification, sewage treatment, promotion of food safety and education on hygienic practices are effective. Travel and trade restrictions are not. For dysentery, mortality can be reduced by prompt recognition of the illness and treatment. Because of widespread resistance to standard, low-cost antibiotics in both cholera and dysentery, the current policy is to reserve antibiotic treatment for those patients at risk of dying if antibiotic treatment is not administered.

36. The action plan for the prevention and control of diarrhoeal diseases supports the strategy through the following programme elements:

(a) Definition of technical policies that provide the content of the strategies;

(b) Planning sound national programmes focusing on priority activities and on selected areas and high-risk population groups that offer the greatest potential for mortality and morbidity reduction, bearing in mind data from programme reviews and a realistic estimate of human and material resources;

(c) Training, supervision and logistics, oriented towards increasing the access of the population to trained health-care providers and health services offering counselling contributing to prevention, such as that related to breastfeeding, to the need for measles immunization, to safe food and to water and sanitation;

(d) Communication and education, oriented to improving home prevention and care, the appropriate use of health facilities and preventive services and the increased use of safe food and water and sanitation facilities;

(e) Monitoring and evaluation, designed to provide the means for timely evolution of strategies to ensure that goals and targets are being met;

(f) Research and development, oriented towards the better application of existing tools and the development of new or improved tools, including work to develop, test and introduce new vaccines;

(g) Coordination, emphasizing a multisectoral and integrated approach using existing mechanisms to strengthen country capacities to coordinate activities at the national and subnational levels (including support for the United Nations Resident Coordinator system and use of the Country Strategy Note); the collaboration of the different organizations at the global level in the implementation and evaluation of the action plan (including that between FAO and WHO in the implementation of the Plan of Action on Nutrition adopted by the 1992 International Conference on Nutrition); the annual WHO Meeting of Interested Parties, in which United Nations organizations, bilateral development agencies, NGOs and representatives from national programmes participate; and use of existing permanent coordinating mechanisms, including the Economic and Social Council, the Administrative Committee on Coordination (ACC) Subcommittee for Water Resources, the Water Supply and Sanitation Collaborative Council, the Codex Alimentarius Commission and the UNICEF/WHO Joint Committee on Health Policy; and regional coordination committees.

A summary of the diarrhoeal diseases action plan for the period 1995-1999 is provided in annex IV.

D. Resource needs

37. In the estimates provided below, resource needs have been narrowly defined within the health sector. This is because a great deal can be accomplished with the limited resources that have been identified and because the full needs of the health sector that could contribute to the prevention and control of these diseases, let alone the needs in sectors relating to areas such as education, water and sanitation, food hygiene and environmental management, are large and merge without clear distinction into the needs required for combating underdevelopment in general. There are certainly countries or areas within countries where such general developmental support is a precondition for efforts to prevent and control these diseases. One example that has been cited in previous reports is the lack of adequate water and sanitation in rural schools in many parts of sub-Saharan Africa. Little improvement in the success of primary school educational efforts can be expected until actions are taken by

schools, communities and Governments to improve environmental health conditions and to reduce the prevalence of common health problems, including malaria and diarrhoeal diseases. More frequently, however, an essential core of infrastructure exists on which the investments identified below can build and make a difference. Nevertheless, without the resources needed for more general development, optimal prevention and control of these diseases will be hindered, and hindered most in the countries in which they are most prevalent.

Malaria

38. Detailed estimates of global resource needs for malaria control have been developed and are available in the complete Action Plan for Malaria Control 1995-2000. 4/ Estimates contained in the action plan indicate that US$ 46 to 61 million per year is required in new external support. Some explanations of these estimates are provided below.

39. In Africa, the scarcity of national resources has meant that most countries must seek external resources in order to mount effective control programmes. Recent examples of countries that have been able to mobilize external support include Ethiopia (US$ 8-11 million in 1994), Ghana (US$ 5-8 million), Namibia (US$ 2-4 million) and Zimbabwe (US$ 6 million).

40. At present, most endemic countries of sub-Saharan Africa are not involved at the national level with vector control and rely on disease management and community-based preventive activities. National government expenditure on malaria represents an average of 10 per cent of the total public expenditure on health. This cost covers primarily the payment of salaries for national staff involved in disease management and for a limited supply of antimalarial drugs. Since the coverage of public services is as low as 40 per cent in many countries, many malaria patients obtain treatment outside the formal health services with an expenditure that exceeds that of the public services. This is being addressed in some areas through the Bamako Initiative, in which communities are supported in establishing revolving funds permitting the purchase of antimalarial and other drugs.

41. For the endemic countries of sub-Saharan Africa, the cost of a basic package of training and management-support activities amounts to some US$ 300,000 per year per country, or a total cost of US$ 14 million per year. An additional US$ 12 million per year is needed for control, including epidemic control. These costs do not include short-term technical assistance or the training of specialized staff in international courses. This total of US$ 26 million could be channelled through bilateral or multilateral arrangements. WHO will provide technical support to receiving countries as required in accordance with the resources at its disposal.

42. The total population at risk outside Africa (predominantly in Asia and the Americas) is approximately 1,750 million persons. It is estimated that the present public costs of specific malaria control programmes in these populations is between US$ 0.10-0.20 per person per year or between US$ 175 to 350 million per year. This cost should decrease during the coming decade as a result of:

(a) Increased financing by individuals and communities;

(b) Reduced malaria risk as a result of social and environmental stabilization;

(c) Better targeting and selection of vector-control activities.

A precondition for the first and third of these events is reorientation and strengthening of national programmes. This will require capacity-building and external investments beyond the current external support, which is mainly used to acquire commodities. Such new external investments should be approximately 10 per cent of the current public expenditures or US$ 20 to 25 million per year.

43. Although the resource requirements for country support for malaria control described above include costs of country-specific operational research, they do not include the broader costs for priority research and development conducted under the auspices of the Special Programme for Research and Training in Tropical Diseases in support of the Global Strategy.

44. TDR goals for the period 1995-1998 include:

(a) Completion of field trials of the Colombian SPf66 malaria vaccine;

(b) Initiation of human clinical and field trials on other candidate malaria vaccines including new asexual blood stage and transmission blocking vaccines;

(c) Identification and development of promising new antimalarial drugs;

(d) Development of strategies to improve health-seeking behaviour and encourage safe home treatment in Africa;

(e) Determination of appropriate and most cost-effective use of impregnated bed-nets in Africa;

(f) Development of strategies to prevent the development of drug resistance in South-East Asia through the unregulated supply of antimalarial drugs, particularly those derived from artemisinin (a new therapeutic agent purified from a traditional Chinese remedy);

(g) Determination of a strategy for the diagnosis and treatment of childhood malaria as part of the WHO/UNICEF integrated strategy for sick children.

45. At present, the Special Programme has a yearly budget for malaria research of approximately US$ 7.5 million. At this level of funding, not all the currently promising approaches to achieving the above goals can be pursued and evaluated. It is estimated that an additional US$ 5 million per year would be required for the Special Programme to accelerate the development and field testing of available tools and strategies to meet the global goals and targets set for control of malaria. The Special Programme's co-sponsors (UNDP, the World Bank and WHO) are urging that contributions to this programme be increased.

Diarrhoeal diseases, including cholera

46. Global resource needs for diarrhoeal disease control (CDD) can be estimated based on the 1995-1999 action plan for diarrhoeal diseases. Resources will be needed to support the strengthening of case management for non-epidemic diarrhoea within the context of the integrated management of the sick child; for prevention activities including improvements in food safety, water supplies and sanitation; for improved preparedness for and control of epidemic cholera and dysentery; and for a minimum package of essential research. Estimates based on the 1995-1999 action plan indicate that US$ 59 million per year will be required in new external support. Brief explanations of these figures are provided below.

47. Owing to the difficulties and expense of preventing diarrhoeal diseases, most countries have focused on improving the quality of diarrhoea case management in health facilities and in the community. This can be accomplished most efficiently through an approach that combines management of diarrhoeal diseases, ARIs, measles, malaria and severe malnutrition into an integrated process. The annual costs of providing integrated clinical care have been estimated at US$ 8 per case, or US$ 1.1 per capita, for low- and middle-income countries. In addition to the recurrent costs of WHO's CDD activities, reorientation and strengthening of national capacity will be needed to support the move to integrated management.

48. The basic package of CDD programme activities designed to support and improve case management (including planning, training and supervision, logistics, communications and monitoring and evaluation) requires approximately US$ 360,000 per country per year, with an additional US$ 40,000 required to support the reorientation of these activities to integrated management. These costs represent US$ 16 million for low-income economies and US$ 17.2 million for lower-middle-income economies. The costs of developing and disseminating the technical content of integrated management relevant to diarrhoeal diseases will require an additional US$ 1 million per year. These costs do not include short-term technical assistance or specialized external training for national staff.

49. Essential preventive activities include the development and adoption by countries and communities of food safety policies and legislation, improved water supply and sanitation systems, effective breastfeeding promotion programmes and community education programmes targeting hygienic food and water practices. National courses on breastfeeding, food and water will cost an average of US$ 120,000 per year per country, and regional workshops on water-related issues will add an additional US$ 50,000. Estimated costs of these activities in low- and lower-middle-income countries, including development and dissemination of technical and training guidelines, are US$ 10 million per year.

50. Preparedness and response for epidemic diarrhoea (cholera and dysentery) must be improved through training of central- and district-level staff in at-risk countries, through improved communication to the public in preparation for and during the early stages of an epidemic, through the refinement of rapid alert systems for epidemics and through swift and effective response by national

and international staff. Estimated costs for continued improvement of district, national and international response capability are US$ 10 million per year.

51. Any estimation of resource needs must also include support for essential research needed to reduce diarrhoea-related morbidity and mortality. These questions include the efficacy and effectiveness of alternative treatment regimens (including ORS formulations, zinc supplementation for persistent diarrhoea, vaccines for rotavirus, cholera, and Shigella, and the efficacy of specific antibiotic regimens for cholera and dysentery), the efficacy and effectiveness of behavioural interventions designed to improve family responses to diarrhoeal diseases and the effectiveness of interventions to prevent the contamination of food. A minimum annual estimate of the support needed for research is US$ 5.5 million.

IV. OPTIONS TO INCREASE RESOURCES

52. Paragraph 5 above refers to the dissatisfaction expressed by members of the Economic and Social Council with the current level of resources being invested in the prevention and control of malaria and diarrhoeal diseases. The Council deplored the fact that these conditions, whose causes and cures are so well known, remain major public health problems. They also recognized that these diseases represent symptoms of a larger problem: inadequate investments for sustainable human development.

53. While solutions to this larger problem are being sought, actions can be, and are being, pursued to increase these resources. In part this requires working more efficiently: doing more with less. In part it requires mobilizing additional resources freed by reducing investments, both within and outside of the health sector, in less productive activities. The plans of action for malaria and CDD summarized above include both of these approaches. It will be important to continue to evolve these plans, guided by the results of monitoring and evaluation activities.

54. Better coordination remains a central strategy for improving efficiency; doing more with less. As emphasized in previous reports and in comments by the Council itself, the most important focus for coordination is at the country level. It is in the long-term interest of all development partners to strengthen the coordination capacities of the host Government itself.

55. In many countries, ministries concerned with the social sector need support to ensure that development projects do not promote disease transmission through alterations in the physical environment or through displacements of migrant populations that bring them into contact with diseases to which they are susceptible, such as malaria. Well-conducted environmental impact assessments should be supported by the international community and should be a prerequisite for support to major infrastructure development projects. Existing intersectoral coordinating mechanisms (such as the Panel of Experts on Environmental Management for Vector Control) and initiatives (such as the AFRICA 2000 initiative for water supply and sanitation) should also be fully exploited.

56. It is hoped that the debate of these issues in both the Council and the General Assembly will serve to remind representatives of the seriousness of these problems and of the need to mobilize additional resources both from within countries where these diseases are prevalent and from the international community. Benefits from prevention and control accrue to the individuals, families and communities at risk, but also to an individual country's development efforts, themselves a stimulus to international trade, and to reduced risks of infection from exportation to non-endemic countries.

V. CONCLUDING OBSERVATIONS

57. Malaria and diarrhoeal diseases are diseases of social and economic underdevelopment. Yet substantial progress in their prevention and control can be accomplished with better application of the resources now available at the community, national and international levels. Progress will depend primarily on the commitments of national Governments, as reflected in the allocation of national resources, to achieving the goals and targets that they have set. Their actions, supported by coordinated efforts of the United Nations system, bilateral development agencies, NGOs and the private sector, can reduce mortality among children from these and related causes, freeing parents from attending to sick children and giving them confidence in the benefits of family planning. These efforts also spur social and economic progress by reducing time lost from school and work.

58. While current prevention and control tools work, better tools would permit even more cost-effective strategies to be implemented, making continued investment in basic research a worthwhile investment. Continued support is also needed for applied research to ensure that the current tools are being appropriately adapted to the communities in which they are being employed.

59. Successes in preventing and controlling malaria and diarrhoeal diseases provide indices of the success of current development policies. Progress in achieving their prevention and control should continue to be monitored at the national and international levels. With concerted efforts, the world can enter the next century having made significant advances in conquering these diseases and having reaffirmed the efficacy of coordinated United Nations action in support of Member States.

Notes

1/ E/1993/68.

2/ E/1994/60.

3/ Official Records of the General Assembly, Forty-eighth Session, Supplement No. 3 (A/48/3/Rev.1), chap. III, sect. B, agreed conclusions/1993/2.

4/ Available from WHO on request.

Annex I

LIST OF ORGANIZATIONS COLLABORATING IN THE PREPARATION OF THIS REPORT

Department of Humanitarian Affairs of the United Nations Secretariat

Department for Policy Coordination and Sustainable Development of the United Nations Secretariat

United Nations Children's Fund (UNICEF)

United Nations Development Programme (UNDP)

United Nations Environment Programme (UNEP)

World Food Programme (WFP)

Office of the United Nations High Commissioner for Refugees (UNHCR)

International Labour Organization (ILO)

Food and Agriculture Organization of the United Nations (FAO)

United Nations Educational, Scientific and Cultural Organization (UNESCO)

World Health Organization (WHO)

World Bank

United Nations Industrial Development Organization (UNIDO)

Annex II

SUMMARY OF THE STATUS OF MALARIA AND DIARRHOEAL DISEASE VACCINES

I. MALARIA

1. Two main types of vaccine are currently under development: one that prevents disease (based on pre-erythrocytic (including liver stage) and asexual blood stage antigens) and one that blocks transmission, aiming to arrest the development of the parasite in the mosquito. Several of these have advanced to the point of human trials for safety, immunogenicity and efficacy.

2. The UNDP/World Bank/WHO Special Programme for Research and Training in Tropical Diseases is supporting work to develop both types, with priority accorded to the disease-prevention vaccines, aiming specifically at reducing both severe and complicated malaria and mortality in children under 5 years old, a high risk group, especially in Africa.

3. Many candidate disease prevention antigens based on the asexual blood stage have been proposed for vaccine development. Recently, the Special Programme sponsored a task force to review and promote the accelerated development of the most advanced candidates. Together with the task force and USAID, the European Union has established a malaria antigen database for use globally via the Internet. In addition, collaborative efforts are under way in the United States of America to scale up and purify, according to Good Manufacturing Practice (GMP), sufficient amounts of an antigen found on the surface of blood-stage merozoites, merozoite surface protein 1 (MSP-1), which has been shown to protect monkeys from infection. Plans for phase I and II clinical trials using this material could be completed by mid-1995. Phase I trials of two other leading recombinant candidate vaccine antigens, serine rich antigen (SERA) and an apical membrane antigen (AMA-1) could begin in 1996.

4. One synthetic cocktail vaccine for P. falciparum, called SPf66 and developed by Dr. M. Patarroyo in Colombia, has been tested extensively in trials in South America and more recently in Africa and South-East Asia. This vaccine, formulated as a peptide-alum combination and given subcutaneously, was selected for clinical studies on the basis of its ability to protect monkeys from infection. Recent results from a field study, cosponsored by the Special Programme and the United Kingdom, Spanish, Swiss and Tanzanian institutes, in Tanzanian children under five years old showed that the vaccine was safe, induced antibodies and reduced by about 30 per cent the risk of developing clinical malaria in this group. Taken together with the results from South America, the Tanzanian study confirms the potential of the vaccine to confer partial protection in areas of high as well as low transmission. Other studies in the Gambia in toddlers aged 6 to 11 months (supported by the British Medical Research Council) and in Thailand in children aged 2 to 15 years old (supported by the Walter Reed Army Institute of Medical Research) will be completed by mid-1995.

5. A "milestone meeting" to review all the available data on SPf66 and to decide on further options for development or production and the use of the Colombian vaccine will be organized by the Special Programme in September 1995. Depending on the conclusions of this review and on the resolution of any outstanding issues, future development would include the design, promotion and execution of large scale (multicentre) field trials to determine the potential of SPf66 to reduce the level of malaria-related mortality in African children under five years old, for which plans are already under consideration. If a significant reduction in mortality or in severe and complicated malaria is then observed, registration of this vaccine would proceed.

6. With respect to transmission blocking vaccines, Pfs25 is a leading candidate antigen found in the ookinete stage of the parasite in the mosquito midgut. Gram amounts of GMP grade material have been produced and a vaccine, based on the antigen formulated with alum, should go into phase I and II clinical trials in the United States and in Africa during 1995.

7. As no single intervention tool represents a panacea, an effective malaria vaccine is expected to be used in an integrated approach to malaria control that includes other protective interventions and disease management activities.

II. DIARRHOEAL DISEASES, INCLUDING CHOLERA

8. Basic research to develop new candidate vaccines for the most important causes of diarrhoea in children is supported by the WHO Global Programme for Vaccines and Immunization, UNIDO and UNDP. Evaluation of the most promising of these vaccines in field trials is supported by the Programme for Diarrhoeal and Acute Respiratory Disease Control and UNICEF.

9. Rotavirus is the most important cause of dehydrating diarrhoea in young children world wide. An estimated 600,000 child deaths are caused by rotavirus annually. The most promising candidate rotavirus vaccine is a rhesus/human tetravalent vaccine that is directed against the four important serotypes of human rotavirus. The vaccine is given by mouth in three doses at the same time as DTP and oral polio vaccine. Studies in Peru and Brazil have shown the vaccine to afford 25 to 50 per cent protection against all episodes of rotavirus diarrhoea for one year and 50 to 75 per cent protection against episodes that are clinically severe and potentially life-threatening. In an effort to improve the level and duration of protection a tenfold higher dose of vaccine is being studied. This has produced 80 per cent protection against severe rotavirus diarrhoea in the United States and the manufacturer is proceeding with plans to develop the vaccine for marketing. The same increased dose is being evaluated in Venezuela to define its potential effect in developing countries better. Results of the trial will be available late in 1995. Several approaches to developing other vaccines are being supported by UNIDO.

10. Enterotoxigenic Escherichia coli (ETEC) are the most frequent cause of diarrhoea among children and adults in developing countries and among travellers to those countries. Studies among adults in Sweden have shown that an oral vaccine composed of killed ETEC and the purified non-toxic B subunit of cholera toxin is safe and immunogenic: some 80 per cent of volunteers develop

intestinal antibody responses after two doses of the vaccine. Studies of efficacy of the vaccine are under way in American sailors travelling to developing countries. Preparations are also being made for evaluation of the vaccine among infants and young children in Egypt.

11. Cholera vaccine research aims to develop a cost-effective oral vaccine that would protect against Vibrio cholerae 01 as well as the new V. cholerae strain 0139, which has caused large outbreaks of cholera in South Asia. Two approaches are being taken: a vaccine composed of killed V. cholerae and purified recombinant B subunit of cholera toxin, and a vaccine composed of live V. cholerae that have been made avirulent by deletion of genes that encode the production of the A subunit of cholera toxin. Field trials of the killed vaccine in Bangladesh and Peru, given in two or three doses, have shown it to be safe and to provide 85 per cent protection for four to six months. The Bangladesh study showed, however, that protection declined after six months, averaging 50 per cent in all age groups for three years. Studies to determine the long-term efficacy of the vaccine and to evaluate the benefit of a booster dose given after one year are under way in Peru. Studies of the live oral vaccine in volunteers have shown it to be safe and highly protective as early as eight days after a single dose. A field trial of the vaccine, given in a single dose, is under way in Indonesia. Results from these studies are expected in one to two years. Research is also under way to develop modified versions of each vaccine that would protect against cholera caused by V. cholerae 0139.

12. Shigella are the most important cause of bloody diarrhoea (dysentery) in children and adults and account for about 15 per cent of diarrhoeal deaths among young children world wide. Disease caused by Shigella dysenteriae type 1 is especially important as it carries a high risk of mortality and the organism is often resistant to all locally available antimicrobials. Several candidate shigella vaccines, including live oral and parenteral vaccines, are being developed, with parenteral vaccines appearing the most promising. A small efficacy trial conducted among adults in Israel has suggested that a parenteral Shigella sonnei polysaccharide-protein conjugate vaccine is protective, at least for several months. This has been supported by a subsequent trial in Israel of a parenteral vaccine based on Plesiomonas shigelloides, an organism with capsular polysaccharide antigen identical to that of Shigella sonnei. Although Shigella sonnei is not the most important shigella serotype in developing countries, success with this approach would suggest that the same method could be used to develop vaccines for the more important serotypes of Shigella, especially Shigella dysenteriae type 1 and Shigella flexneri.

Annex III

DIARRHOEAL DISEASES: SUMMARY OF ACTION PLAN 1995-1999

Global goals for the year 2000:

Reduction by 50 per cent in deaths due to diarrhoea in children under the age of 5 years

Reduction by 25 per cent of episodes of diarrhoea in children under the age of 5 years

Universal access to safe drinking water

Universal access to sanitary means of excreta disposal

Responsible United Nations agencies

Case management strategy:	UNICEF, WHO, World Bank
Preventive strategies:	FAO, UNDP, UNEP, UNESCO, UNICEF, UNHCR, UNIDO, WFP, WHO, World Bank
Work plan management:	WHO
Coordination at country level:	UNDP
Coordination at global level:	Economic and Social Council

PROGRAMME ELEMENTS	PROJECTS, ACTIVITIES AND TARGETS				
	1995	1996	1997	1998	1999
1. Strategies technical content: a. Nonepidemic diarrhoea case management	Treatment charts on the integrated case management of the sick child, including diarrhoea, in outpatient services	Revised ORS formulations Guidelines on treatment of persistent diarrhoea	Manual on integrated inpatient care of the sick child, including severe dehydration	Revised guidelines on treatment of diarrhoea in severely malnourished children	All developing countries will have adopted policies on integrated management of the sick child, including revised guidelines on treatment of diarrhoea
	Intercountry and national seminars to promote new guidelines on integrated management of the sick child, including revised guidelines on treatment of diarrhoea				
b. Epidemic diarrhoea: cholera and dysentery	Fact sheets on cholera control Guidelines for the control of epidemic dysentery Recommendations on use of cholera vaccines in emergency situations	Promotion of policies and guidelines on preparedness and response to cholera and dysentery epidemics			All risk countries will have adopted policies on preparedness and response to cholera and dysentery epidemics
c. Prevention	Manual on surveillance of foodborne disease Guide on control of salmonellosis	Development on food safety standards, codes of hygienic practice and guidelines through Codex Alimentarius Commission Strengthening of national food control systems, integration of food safety in primary health care, and setting up foodborne disease surveillance			All developing countries will have adopted food safety policies and legislation
	Guidelines on steps to successful breastfeeding and on re-establishing optimal breastfeeding practices	Guidelines for storage of breast milk	Review of household technologies for improving food safety	Guidelines on health education in food safety	
	Guide to participatory methods and tools for hygiene behaviour change in water supply and sanitation Guidelines on sanitation and hygienic education	Intercountry and national seminars on policies on operation and maintenance of water supply and sanitation systems, and on social participation and hygiene education in support to water and sanitation programmes			All countries will have adopted new or revised policies on water supply and sanitation

<table>
<tr><th rowspan="2">PROGRAMME ELEMENTS</th><th colspan="5">PROJECTS, ACTIVITIES AND TARGETS</th></tr>
<tr><th>1995</th><th>1996</th><th>1997</th><th>1998</th><th>1999</th></tr>
<tr><td>2. Planning</td><td>Guide on the transition from disease specific programmes to integrated sick child programmes

Planning guide on the integrated management of the sick child, including diarrhoea

Managers' guide on the use of participatory methods for hygiene behaviour change in water supply and sanitation</td><td colspan="4">National CDD plans of operations will be revised to set targets for accelerated programme implementation, particularly in those areas critical for attaining rapid reduction of mortality, and to plan the transition to the establishment of the programmes on integrated management of the sick child

The workplans for the control of epidemic diarrhoea will focus on governments' preparedness and response to outbreaks of cholera and dysentery

The water supply and sanitation national plans will address both the long-term development and sustainability of the sector, and the preparedness and response to emergency situations generated by outbreaks of cholera and dysentery

National plans of action on nutrition will be implemented as recommended by the 1992 International Conference on Nutrition</td></tr>
<tr><td rowspan="2">3. Training and supervision
a. Noncpidemic diarrhoea case management</td><td>Field test of the training course on integrated management of sick child

Field test of methods for training in drug supply management at health centres</td><td>Development of training course on integrated inpatient care of the sick child</td><td>Field test of course on integrated inpatient care of the sick child

Development of training materials on integrated management of the sick child for medical and paramedical schools</td><td>Fieldtesting of training materials on integrated management of the sick child for medical and paramedical schools</td><td></td></tr>
<tr><td colspan="3">Intercountry workshops and courses on programme management

National courses on supervisory skills</td><td>60% of health staff with supervisory responsibilities will have been trained in supervising DD case management</td></tr>
</table>

PROGRAMME ELEMENTS	PROJECTS, ACTIVITIES AND TARGETS				
	1995	1996	1997	1998	1999
	Intercountry and national courses for trainers on case management of sick child Courses on case management for health workers responsible for child care				60% of health workers responsible for child care will have been trained in standard case management either at specific DD or at sick child courses
Nonepidemic diarrhoea cont/...	National workshops on strengthening the teaching of medical students about diarrhoeal diseases for teachers of medical schools National workshops on CDD curriculum for basic training instructors of nurses and other paramedical workers				100% of medical schools and 80% of paramedical schools in developing countries will have adopted methods to teach effectively DD case management
b. Epidemic diarrhoea: cholera and dysentery	Development and field test of training course for district level staff on preparedness and response to cholera and dysentery epidemics	District level courses on preparedness and response to cholera and dysentery epidemics in risk countries			All risk countries will have carried out district training on preparedness and response to epidemics
c. Prevention	Planning guide on training on breastfeeding counselling	National courses on breastfeeding counselling to enable health workers to support optimal breastfeeding practices			
	National courses on: a. Formulation of national food policy, plan of action and review of food legislation for government officials, and representatives of consumers, industry and trade b. Methods of safety assurance and food inspection for government officials and food industry quality assurance staff, including Hazard Analysis Critical Control Point methodology c. Hygienic handling of food, particularly weaning food in the home, for health workers and nutritionists d. Microbiological analysis of food for technicians of food control laboratories				All countries will have under execution plans of training on food safety

<table>
<tr><th rowspan="2">PROGRAMME ELEMENTS</th><th colspan="5">PROJECTS, ACTIVITIES AND TARGETS</th></tr>
<tr><th>1995</th><th>1996</th><th>1997</th><th>1998</th><th>1999</th></tr>
<tr><td></td><td colspan="4">Regional workshops on:
a. operation and maintenance of water supply and sanitation systems
b. water conservation and safe use of waste water in water-scarce areas
National workshops for community workers on:
a. operation, maintenance and monitoring of village water supplies
b. planning of village programmes in sanitation and hygiene education
National workshops for urban managers on environmental health, including water quality and sanitation</td><td>All countries will have under execution plans of training on water supply and sanitation</td></tr>
<tr><td>4. Logistics</td><td colspan="4">Procurement, storage and distribution of ORS will be ensured through the Essential Drugs Programmes, including the Bamako Initiative-based programmes
At the community level, promotion of village-based resources for ORT/ORS - depots, community pharmacies - will be promoted.
Mobilization of the pharmaceutical industry in developing countries for the promotion of ORS/ORT
Annual worldwide survey on production and distribution of ORS
Organization of stocks of supplies at peripheral storage facilities for easy local access upon the onset of epidemic diarrhoea</td><td>100% of the population will have access to oral rehydration salts (ORS)</td></tr>
<tr><td>5. Communication and education
a. Nonepidemic diarrhoea case management</td><td>Field experience on the use of the WHO manual on focused ethnographic studies on diarrhoeal diseases to adapt messages on home care.</td><td>Guidelines on the use of ethnographic data to improve health workers communication with families</td><td>Development of a guide on working with communities and on community education</td><td>All countries will have sound communication strategies on home case management, including intensive social mobilization fortnights</td><td rowspan="2">100% of mothers will report correct knowledge of the need to provide increased fluids and to continue feeding a child with diarrhoea

80% of mothers will know the three rules of home care of a child with diarrhoea: increased fluids, continued feeding and when to seek care</td></tr>
<tr><td></td><td colspan="4">Training on intercommunication skills will be included in all training courses on case management
Promotion of guide for the effective use of radio
Promotion of social mobilization and networking to create partnership at global national and local levels in pursue of the diarrhoeal disease control targets
Organization of national ORT Weeks/Fortnights twice or thrice a year
Advocacy seminars and brochures for members of professional associations
Orientation activities addressed to pharmacists and drug sellers
Implementation of School Health Initiative</td></tr>
<tr><td>b. Epidemic diarrhoea: cholera and dysentery</td><td>Development and evaluation of appropriate communication messages in preparation for and during early stages of an epidemic</td><td colspan="3">Dissemination of messages in risk countries on when to suspect the onset of an epidemic, who should be informed and what protective measures should be taken

Involvement of concerned communities in the required actions</td><td></td></tr>
</table>

PROGRAMME ELEMENTS	PROJECTS, ACTIVITIES AND TARGETS				
	1995	1996	1997	1998	1999
c. Prevention	Development of health messages on food safety for mass media	Development of appropriate tools to work with communities on food safety Dissemination of food safety messages through mass media			
Prevention cont/...	Development of tools for working with communities on water supply and sanitation problems	Promotion of key hygiene behaviours Promotion of the School Health Initiative: community and teachers' participation in hygiene education and improvement of water supply and basic sanitation, in particular in primary schools of poor rural areas Promotion of participatory techniques for working with communities on improving existing systems of water supply and sanitation			100% access of the population to adequate information on safe water and safe sanitation systems
6. Monitoring/evaluation a. Nonepidemic diarrhoea case management	Development and testing of rapid multiple indicator survey methodology Evaluation of the early use of the CDD Focused Programme Review Guide Development of methods to monitor integrated case management of the sick child at first level health facilities Guidelines on impact evaluation of the national CDD programme		Development of survey methods on case management of the sick child at first level health facilities Development of survey methods for household surveys on morbidity and treatment practices in relation to the sick child		90% of diarrhoea cases will have been correctly rehydrated at health facilitites 90% of diarrhoea cases will have received increased fluids and continued feeding 200 CDD focused programme reviews will have been accomplished
	Evaluation of case management of diarrhoea disease in children at first level facilities through CDD health facility surveys Evaluation of diarrhoea morbidity and treatment practices in the community through CDD household surveys and multiple indicators surveys Evaluation of CDD programme situation through focused programme reviews Evaluation of diarrhoeal disease mortality				

/...

PROGRAMME ELEMENTS	PROJECTS, ACTIVITIES AND TARGETS				
	1995	1996	1997	1998	1999
b. Epidemic diarrhoea: cholera and dysentery	Weekly reporting of data at health facilities on cases of cholera and dysentery Routine charting of weekly data on cases to detect abnormal increases which would indicate the start of an epidemic Establishment of national reference laboratories to identify etiologic agents and monitor bacterial drug resistance Development of indicators to monitor impact of food safety interventions on the control of epidemic diarrhoea				All countries at particular risk of outbreaks of cholera and dysentery will have in place mechanisms to respond rapidly
c. Prevention	Surveillance of food contamination, foordborne diseases and hazardous practices in relation to food handling UNICEF/WHO Joint Monitoring Programme for Water Supply and Sanitation will help countries strengthening their capacity to manage services through routine monitoring of data and the monitoring system technology Laboratory surveillance of drinking water				100% of the population will have access to safe drinking water 100% of the population will have access to sanitary means of excreta disposal
7. Research a. Nonepidemic diarrhoea case management	Efficacy of alternative ORS formulations for treatment of dehydration Zinc supplementation impact on course of persistent diarrhoea	Appropriate advice-giving on feeding by health workers to families Methods of evaluating families' comprehension of home care advice	Optimal management of diarrhoea in severely malnourished children Development of interventions to improve families' behaviours in relation to childhood illness		
b. Epidemic diarrhoea: cholera and dysentery		Efficacy and safety of fluoroquinolones for treatment of dysentery in children Efficacy of azithromycin for treatment of dysentery in adults		Efficacy and safety of new antibiotics against cholera and dysentery	
c. Prevention	Field trials of benefits and safety of vitamin A supplementation in young infants Efficacy of nutrition counselling provided as an integral part of the integrated management of the sick child Evaluation of the effectiveness of training on lactation counselling				

PROGRAMME ELEMENTS	PROJECTS, ACTIVITIES AND TARGETS				
	1995	1996	1997	1998	1999
	Completion of field trials of rotavirus vaccines safety and efficacy (RRV-tetravalent vaccine)	Completion of field trials of cholera vaccines safety and efficacy (killed whole-cell/ recombinant B-subunit, and live oral CVD-103-HgR vaccines)	Field trials of safety and efficacy of candidate Shigella vaccines (dysentery) Field trials of safety and efficacy of possible recombinant rotavirus vaccines		
	Continuation of laboratory and animal experimental work on possible recombinant rotavirus vaccines				

PROGRAMME ELEMENTS	PROJECTS, ACTIVITIES AND TARGETS				
	1995	1996	1997	1998	1999
8. Coordination	WHO/UNICEF Joint Policy Health Committee, Geneva, January 1995 World Summit for Social Development, Copenhagen, March 1995 ECOSOC meeting, July 1995	UN Secretray-General's Report to General Assembly on Follow-Up to the World Summit for Children and mid-decade review of progress achieved	UNICEF/WHO Joint Committee on Health Policy, January 1997 Review of the coordination of UN agencies in the implementation of the workplan by ECOSOC, July 1997		UNICEF/WHO Joint Committee on Health Policy, January 1999 Review of the coordination of UN agencies in the implementation of the workplan by ECOSOC, July 1999
	Country level coordination: Using existing mechanisms to strengthen country capacities to coordinate activities at national and sub-national levels, including support for the United Nations Resident Coordinator system Regional coordination committees: American Region Inter-Agency Coordination Committee on Child Survival Programmes Africa 2000 Initiative Southern Africa Plan of Action for Future Emergency United Nations Economic and Social Committee for Asia and the Pacific (ESCAP) Global coordination committees: UNICEF/WHO Intersecretariat Meetings WHO CDD Meeting of Interested Parties WHO CDD Management Review Committee Inter-Agency Steering Committee for Water Supply and Sanitation Water Supply and Sanitation Collaborative Council Codex Alimentarius Commission FAO/WHO Follow-Up of Declaration and Plan of Action of International Conference on Nutrition				

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ABBREVIATIONS:

CDD: Control of diarrhoeal diseases
DD: Diarrhoeal diseases
ORS: Oral rehydration salts
ORT: Oral rehydration therapy

Annex IV

SUMMARY OF ACTION PLAN FOR MALARIA CONTROL: TIMETABLE OF MILESTONE STEPS

Global targets for the year 2000:
malaria mortality will have been reduced by at least 20% compared to 1995 in at least 75% of affected countries

Programme Elements			1995	1996	1997	1998	1999
I. Development of national capabilities for:	(i) Planning implementation and evaluation of malaria control (involving UNICEF, World Bank, UNDP, European Commission and bilateral agencies).	(a) Planning	Continuation of training programme managers with emphasis on district level		80% of African a.c. have functional programmes with managers trained in malaria control		
			80% of African a.c. have formulated updated plans of action based on analysis of epidemiological situation		All endemic countries outside Africa have reoriented their national control programmes		
		(b) Implementation	50% of a.c. implement national plans of action	70% of a.c. implement national plans of action	90% of a.c. implement national plans of action		

a.c. = affected countries (i.e., where malaria is an important public health problem)

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Programme Elements			1995	1996	1997	1998	1999
	(ii)Disease Management	(a) Antimalarial Drug Policy (with SIDA and Netherlands cooperation)	Update of guidelines on artemisinin derivatives		In 50% of a.c. appropriate national antimalarial drug policy implemented	In 80% of a.c. national drug policy implemented In 50% of a.c. the population has access to affordable, adequate treatment	In 80% of a.c., the population in all areas has access to affordable and adequate treatment
		(b) Facilities (all sick child related activities with UNICEF and USAID)	Training of district health teams on disease management (involving many bilateral agencies)		In 80% of a.c., district health teams trained on disease management		In all a.c., district health teams trained on disease management
			Field test of training course on integrated management of sick child	Development of training course on integrated inpatient care of the sick child	Field test of course on integrated inpatient care of the sick child Development of training materials on integrated management of the sick child for medical and paramedical schools		
			Intercountry and national courses for trainers on case management of sick child				60% of health workers responsible for child care trained in standard case management either at malaria or sick child courses
			Courses on case management for health workers responsible for child care				

a.c. = affected countries (i.e., where malaria is an important public health problem)

<table>
<tr><th colspan="3">Programme Elements</th><th>1995</th><th>1996</th><th>1997</th><th>1998</th><th>1999</th></tr>
<tr><td rowspan="6"></td><td rowspan="6"></td><td rowspan="4"></td><td>Field studies on new diagnostic tools (involving UNDP and World Bank)</td><td>Guidelines on use of new diagnostic tools</td><td></td><td>Cost-effective diagnostic tools routinely used in at least 25% of a.c.</td><td>Laboratory diagnosis available in 50% of the health facilities</td></tr>
<tr><td colspan="5">Training on management of severe malaria for medical doctors in general health services and private sector (involving bilateral agencies)</td></tr>
<tr><td colspan="2">Field research in malaria and anaemia (involving UNDP and World Bank)</td><td>Control of malaria associated anaemia incorporated in at least 25% of the a.c.</td><td>Control of malaria associated anaemia incorporate in at least 50% of a.c.</td><td>Control of malaria associated anaemia incorporated in at least 80% of a.c.</td></tr>
<tr><td></td><td>Guidelines on control of malaria associated anaemia</td><td></td><td></td><td></td></tr>
<tr><td rowspan="3">(c) Community

(involving UNDP, UNESCO, UNICEF, World Bank, bilateral agencies and NGO's)</td><td colspan="2">Training of community health workers (CHW) and health care providers on malaria diagnosis and treatment</td><td>Community based malaria control established in at least 5 African a.c.</td><td></td><td rowspan="3">25% of African a.c. have operational community based malaria control</td></tr>
<tr><td colspan="3">Controlled studies in Africa on cost-sharing management of malaria at the community level</td><td></td></tr>
<tr><td></td><td>Guidelines to implement effective malaria control at the community level in Africa</td><td></td><td>Revision of guidelines on malaria control at the community level in Africa</td></tr>
</table>

a.c. = affected countries (i.e., where malaria is an important public health problem)

Programme Elements			1995	1996	1997	1998	1999
			Operational research on treatment seeking behaviour in the community	Training of mothers on home treatment		50% of malaria programmes in African a.c. involved in health education and communication	80% of malaria programmes in African a.c. involved in health education and communication
			Training of drug vendors at the peripheral level on antimalarial drugs				
	(iii) Selective and sustainable preventive measures	(a) Chemo-suppression in pregnancy (involving UNDP, World Bank, CDC)	Controlled studies on new approaches to chemosuppression in pregnancy	Guidelines on protection of pregnant women in highly endemic areas	In 50% of African a.c. guidelines on protection of pregnant women are implemented	In 80% of African a.c. guidelines on protection of pregnant women are implemented	Measurable reduction in proportion of complications due to malaria in primiparae in at least 5 African a.c.
		(b) Selective vector control (involving PEEM, UNIDO, FAO, UNEP, UNCHS, World Bank and several bilateral organizations, including the Netherlands and France)	Training in selective vector control		Updated guidelines on selective vector control	Entomological teams trained in selective vector control in at least 80% of a.c.	Vector control targeted correctly in all countries
			Revised guidelines on selective vector control				
			Resume database on insecticide resistance	Draft guidelines on management of insecticide resistance	Informal consultation on insecticide resistance and its management	Update guidelines on management of insecticide resistance	

a.c. = affected countries (i.e., where malaria is an important public health problem)

Programme Elements			1995	1996	1997	1998	1999
			Improved test to detect for resistance to pyrethroids		Monitoring of resistance to pyrethroids		
	(iv) Malaria control in epidemics and emergencies (involving European Commission, Italian Cooperation, ODA, UNDP, UNHCR, UNICEF, NGO's and other bilaterals)		Guidelines on early warning and forecasting for epidemics Guidelines on malaria control in refugee camps	80% of epidemic prone countries have an emergency plan of action	80% of epidemic prone countries implement plans for prevention and control of epidemics		All malaria epidemic prone countries develop capacity for forecasting, early prevention and control of epidemics
	(v) Programme management and surveillance			Preparation for 20th Expert Committee on Implementation of Global Strategy	20th Expert Committee on Implementation of Global Strategy 50% of a.c. developed epidemiology and managerial information applied accordingly to regional guidelines	In 80% of all a.c. surveillance is fully integrated in general health services	In all a.c. surveillance is fully integrated in general health services
			Establishment of comprehensive country profiles on malaria of all a.c.		Updating country profiles		Updating country profiles
II. Research and development on selective and sustainable protection methods	(i) Personal protection (involving UNDP, UNICEF, World Bank and several bilateral agencies and NGO's)		Conclusion of TDR bednet studies in Africa	Guidelines on use of impregnated bednets	25% of malaria control programmes have access to insecticide impregnated materials		50% of malaria control programmes have access to insecticide impregnated materials

a.c. = affected countries (i.e., where malaria is an important public health problem)

Programme Elements			1995	1996	1997	1998	1999
			Study group meeting on operational applications of bednets in Africa				
	(ii) Vaccines (involving European Commission, UNDP, UNIDO, World Bank and bilateral agencies, including USAID)		Completion of SPf66 malaria vaccine trials in Columbia, The Gambia and Thailand Review meeting on SPf66	Operational research on SPf66			Introduction of malaria vaccines on operational scale
			Initiation of Phase I of other candidate vaccines		Phase II trials of other vaccines		
III. Coordination	(i) National level (involving all interested parties)				At least 50% of a.c. have developed mechanisms for coordination of activities with partners in malaria control		50% of development projects in a.c. incorporate malaria prevention and control
	(ii) Global and Interregional (involving all interested parties)		Interagency agreement on Action Plan for Malaria Control 1995-2000 Preparations for World Bank malaria projects in at least 5 countries of WHO Regions	Meeting of Interested Parties on Malaria Control		Meeting of Interested Parties on Malaria Control	
			Joint policy agreements for malaria control with international and regional organizations				

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